BLACK BOX
NETWORK SERVICES

Model AC139A
Multi-Format HD Video Scaler

Converts between HD and PC Video Formats

Bridges all high-resolution standards
Supports both Analog and Digital Video Formats
Can Horizontally Mirror Output

CUSTOMER SUPPORT INFORMATION

Order **toll-free** in the U.S. 24 hours, 7 A.M. Monday to midnight Friday: **877-877-BBOX**
FREE technical support, 24 hours a day, and 7 days a week: Call **724-746-5500** or fax **724-746-0746**
Mail order: **Black Box Corporation**, 1000 Park Drive, Lawrence, PA 15055-1018
Web site: **www.blackbox.com** • E-mail: **info@blackbox.com**

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FCC and Canadian Dept of Communications Radio Frequency interference statements

This equipment generates, uses, and can radiate radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio communication. It has been tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Subpart B of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when the equipment is operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user at there own expense will be required to take whatever measures may be necessary to correct the interference. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This digital apparatus does not exceed the Class A limits for radio noise emission from digital apparatus set out in the Radio Interference Regulation of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique publié par le ministère des Communications du Canada.

European Union Declaration of Conformity

This product complies with the requirements of the European EMC directive 89/336/EEC

CE

Normas Oficiales Mexicanas (NOM)
Electrical Safety Statement
INSTRUCCIONES DE SEGURIDAD

1. Todas las instrucciones de seguridad y operación deberán ser leídas antes de que el aparato eléctrico sea operado.
2. Las instrucciones de seguridad y operación deberán ser guardadas para referencia futura.
3. Todas las advertencias en el aparato eléctrico y en sus instrucciones de operación deben ser respetadas.
4. Todas las instrucciones de operación y uso deben ser seguidas.
5. El aparato eléctrico no deberá ser usado cerca del agua—por ejemplo, cerca de la tina de baño, lavabo, sótano mojado o cerca de una alberca, etc.
6. El aparato eléctrico debe ser usado únicamente con carritos o pedestales que sean recomendados por el fabricante.
7. El aparato eléctrico debe ser montado a la pared o al techo sólo como sea recomendado por el fabricante.
8. Servicio—El usuario no debe intentar dar servicio al equipo eléctrico más allá a lo descrito en las instrucciones de operación. Todo otro servicio deberá ser referido a personal de servicio calificado.
9. El aparato eléctrico debe ser situado de tal manera que su posición no interfiera su uso. La colocación del aparato eléctrico sobre una cama, sofá, alfombra o superficie similar puede bloquea la ventilación, no se debe colocar en libreros o gabinetes que impidan el flujo de aire por los orificios de ventilación.
10. El equipo eléctrico deber ser situado fuera del alcance de fuentes de calor como radiadores, registros de calor, estufas u otros aparatos (incluyendo amplificadores) que producen calor.
11. El aparato eléctrico deberá ser connectado a una fuente de poder sólo del tipo descrito en el instructivo de operación, o como se indique en el aparato.
12. Precaución debe ser tomada de tal manera que la tierra fisica y la polarización del equipo no sea eliminada.
13. Los cables de la fuente de poder deben ser guiados de tal manera que no sean pisados ni pellizcados por objetos colocados sobre o contra ellos, poniendo particular atención a los contactos y receptáculos donde salen del aparato.
14. El equipo eléctrico debe ser limpiado únicamente de acuerdo a las recomendaciones del fabricante.
15. En caso de existir, una antena externa deberá ser localizada lejos de las lineas de energia.
16. El cable de corriente deberá ser desconectado del cuando el equipo no sea usado por un largo periodo de tiempo.
17. Cuidado debe ser tomado de tal manera que objectos liquidos no sean derramados sobre la cubierta u orificios de ventilación.
18. Servicio por personal calificado deberá ser provisto cuando:

A: El cable de poder o el contacto ha sido dañado; u
B: Objectos han caído o líquido ha sido derramado dentro del aparato; o
C: El aparato ha sido expuesto a la lluvia; o
D: El aparato parece no operar normalmente o muestra un cambio en su desempeño; o
E: El aparato ha sido tirado o su cubierta ha sido dañada.

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1. Introduction

1.1 General

Thank you for purchasing the Black Box Model AC139A, a powerful video processor and scaling product. It combines the functions of many products in one compact and versatile unit. It has both high definition analog as well as digital inputs. Two outputs are available (simultaneously active†), one analog (RGBHV) and one digital DVI-D (HDMI™ compatible).

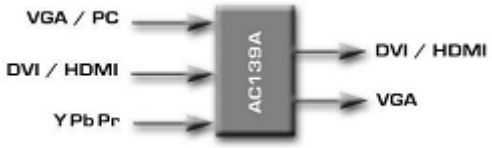


Figure 1 – Block Diagram

The user can select the desired input using individual buttons on the front panel, on the included IR-remote, or by issuing ASCII RS232 commands.

The output resolution can be set can range between 480i to 1080p for HDTV, or VGA (640x480) to WUXGA (1920X1200) for the PC. The unit uses the latest high-resolution video scaling techniques to produce a superior video output for a crisp image on the output display. Both video outputs can also be mirrored horizontally making it ideal for teleprompting and rear projection systems where the image needs to be .flipped.

The desired output resolution is set directly using individual buttons on the IR remote, or via unique ASCII RS232 commands. The front panel can also be used to set the output resolution. A user-friendly on-screen-display (OSD) is used to control the operation of the device from the front panel. There are also 'hot-key' combinations on the front panel to directly set the output to basic PC or HDTV resolutions so that a picture can be displayed on any LCD.

† For HDMI™ compliance, when the DVI input is selected, and HCDP content protection is detected on the signal, the HD15 analog output is blanked. The front panel input LED will blink when this condition is detected. The Digital DVI output will be active when connected to a HDCP compliant LCD (such as a display with HDMI™ input).

The DVI input is HDCP compliant. This allows the unit to be used as an HDMI™ Video Scaler (HDMI™ audio is not passed through). When the digital input has HDCP encryption, the DVI output must be connected to a HDCP compatible LCD (by definition all displays with HDMI™ input must be HDCP compliant).

Built-in universal power supply keeps the installations clutter free.

The unit can be used to convert and change resolution in the following ways:

		OUTPUT		
		DVI	HDMI (1)	VGA (RGBHV)
INPUT	DVI	●	●	●
	HDMI (1)	●	●	●
	YPbPr (Component)	●	●	●
	VGA (RGBHV)	●	●	●

Notes: (1) HDMI™ to DVI cable or adapter required

1.2 Features

- High definition digital (DVI / HDMI) and analog (PC VGA / YPbPr) Scaler that accepts PC RGB (up to UXGA), HD Component (480i up to 1080p) and DVI (up to WUXGA) and scales them to DVI and analog outputs at user specified resolutions
- HDCP (HDMI™) compliant DVI input and output
- Output resolution selectable from 480i to 1080p (HDTV) and VGA to WUXGA (PC).
- RS232 Control port, IR remote, and Front Panel Controls
- Native output mode ensures optimal resolution on the screen based on the display's EDID.
- Output picture adjustments for brightness, contrast, RGB levels
- Output can be mirrored! Perfect for teleprompting or rear projection applications
- State of the art scaling engine for sharp and flicker free output
- Built-in Universal Power Supply with standard IEC-320 jack
- Compact, Rugged, Reliable, and Economical
- Rack-mount brackets available

2. Installation

2.1 Connecting the Video Inputs and Outputs

The video scaler can accept a VGA (analog RGBHV from PC), DVI (digital video from PC or HDMI™ source), and Component Video (Y Pb Pr) from any source.

When the source is from an HDMI™ output, an HDMI to DVI cable or adapter is required. Please contact Black Box if you need to purchase this cable.

Two outputs connectors are provided. Both show the selected input at the desired output resolution.

Figure 2 - ***Rear Panel***

Video cables for connecting the I/O ports are not supplied with the unit.

If you would like to mount the unit in a rack, please contact Black Box to purchase a rack-mount accessory kit for the unit.

Figure 3 – Optional Rack-mount Kit

Y Pb Pr: This is also known as Component Video input (analog) and on some equipment it may be labeled as YCbCr. Since this input supports all interlace and progressive resolutions from 480i to 1080p, you can connect it to both legacy and new equipment alike as long as it has component video output. For a list of supported resolutions, please see Specifications Section titled "Supported Input Formats" found later in this manual. For example; if you are using the DVI output of the scaler to connect to the HDMI input of an HDTV, you could use the YPbPr input to connect your legacy DVD player, or PlayStation™ equipment to your HDTV.

VGA: This is the analog RGBHV signal from a PC. A wide range of resolutions from VGA to WUXGA is supported. For a list of supported resolutions, please see Specifications Section titled "Supported Input Formats" found later in this manual. This input provides a convenient way to display your PC's video without losing clarity on any TV or HDTV as long as the TV has either HDMI™ or component inputs. Since the AC139A uses state of the art video scaling, often you will achieve a sharper image on your LCD even if it has a VGA input!

DVI: This is the digital input to the Scaler. You can connect to the DVI-D or DVI-I outputs of any PC. The DVI input of the unit supports HDCP encryption. This means that it is compatible with Content Protected HDMI™ video sources. However, the audio of HDMI source is not processed through and you should configure and use the separate audio output of your HDMI™ source. The DVI input of the scaler can handle most HDTV and PC resolutions. For a list, please see Specifications Section titled "Supported Input Formats" found later in this manual.

Note about DVI input Cable

If you will be connecting to an HDMI™ source you will either need an HDMI to DVI cable or an HDMI to DVI adapter.

Figure 4
Example of HDMI™ to DVI Cable

If you will be connecting to a DVI source you will then need a male to male DVI cable. DVI-D cables will work since they do not have the extra pins that DVI-I cables have, but since the AC139A utilizes a

connector with all the pin positions you could use a DVI-I cable as long as your source also has all the pin positions.

Video Outputs

VGA: This is a dual purpose output. Depending on the output resolution you set it will output a PC compatible signal.

Note about HDCP

For HDMI™ compliance, if the input is from an HDMI™ source with content protection, the VGA output is blanked and front panel LED blinks.

DVI: This is the TMDS digital output of the Scaler. You can connect this to any PC compatible LCD with a DVI compatible connector input, or any HDTV with a HDMI™ compatible connector input using the appropriate cable.

2.2 Other Connections

RS232: This 9-pin D-sub connector is for connecting to your PC or other serial control device for remote control of the AC139A.

Scaler		Interconnect Cable DB9 M/F	Remote Controller	
PIN	Definition		PIN	Definition
2	TxD	→	2	RxD
3	RxD	←	3	TxD
5	GND	↔	5	GND

AC power jack: This is a standard IEC320 / C14 power connection. The unit's power supply is universal (90 ~ 264 Vac, 50 ~ 60 Hz).

3. Configuration and Operation

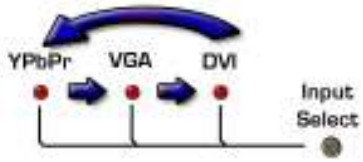
3.1 Front Panel

Figure 5 – ***Front Panel***

1. **Power:** Press this button to turn ON or turn OFF (standby) the power to the unit.
2. **Menu/Enter:** This button serves two purposes.
   A. Pressing the button will bring up the OSD main menu as shown in the "OSD Menus" section of this manual.
   B. To act as an "Enter" key to enter sub menu or to adjust setting value of the selected parameter.
3. **▲or▼ buttons:** The buttons provide 3 functions:
   A. Input Select (▲): Press the ▲ button repeatedly to select your desired input source. The input sources are toggled through in the following sequence.

   Figure 6

   Input Selection Sequence

   B. Auto Tune (▼): Press the ▼ button to initiate picture auto adjust for analog inputs (component or PC/VGA). The scaler will fine tune the position (centering) and color of the output picture.
   C. When in the OSD menu mode: Press the ▲ or ▼ buttons to move up or down the highlighted bar to the desired parameter. Once a parameter is highlighted then press the MENU / Enter button to adjust the setting.
4. Input LED Indicators: The illuminated LED indicates that corresponding source is being selected as input.
5. IR Sensor: Infrared remote control sensor.

Front Panel Quick Selection "Hot Keys"

Figure 7

If you are not getting any image on your display, it could be that the output resolution setting of the AC139A is not supported by your LCD. Using serial commands or the IR remote, one can quickly switch between various output resolutions. However since the front panel operation relies on OSD menu for navigation, it is very difficult to change the output setting from the front panel if you cannot see the OSD. Therefore to quickly jump to a basic resolution that is supported by virtually all displays, is a great feature.

If you press and **hold down** the MENU button, and then hit the ▲ button you get a XGA output which is supported by most PC compatible displays.
If you press and **hold down** the MENU button, and then hit the ▼ button you get a 480p output which is supported by most HDTV compatible displays.

3.2 OSD Menus

Pressing the "MENU" button brings up the On-Screen Display (OSD) main menu as shown below:

OSD Menu System				
Video	**Color**	**Output**	**OSD**	Info
Contrast	User	VGA	H. Position	Version
Brightness	Normal	SVGA	V. Position	Input
Hue	Warm	XGA	Timeout	Output
Saturation	Cool	SXGA	Background	
Sharpness		UXGA	Exit	
Picture Mode		WXGA		
Scale		WSXGA		
Mirror		WUXGA		
Noise Reduction		480i		
(H Position) †		480p		
(V Position) †		576i		
Exit		576p		
		720p (50/60)		
		1080i (50/60)		
		1080p (50/60)		
		Native		

† H and V Position are only available for VGA or component input

Use the▲ or ▼ buttons to move the highlight bar to the desired parameter, and then press the MENU button to enter the sub-menu of the selected parameter.

Video Submenu:

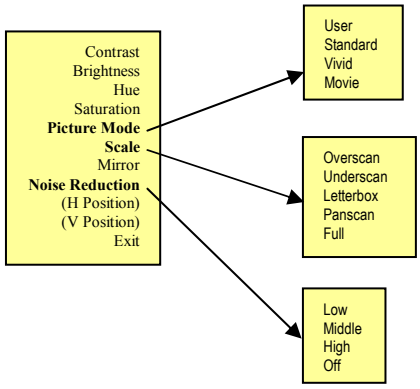


Figure 8

OSD Main Menu structure

To adjust the picture quality, use the▲ or ▼ buttons to move the highlight bar to the desired item and then press the MENU to confirm your selection. At this point, the selected parameter will turn red, you can then use the ▲, ▼ buttons to increase or decrease the value of the parameter. When the adjustment has been completed; press the MENU button to leave that parameter. Move the highlight bar to EXIT, and then press the MENU button to exit.

Note: The "H-position" and "V-position" are only available when the component or PC (VGA) input is selected

Picture mode - There are 4 picture modes to choose from:

User: Select to adjust the parameters to your favorite levels and then automatically store it.
Standard: Standard factory default settings for optimal display
Vivid: High saturation picture for optimal display in a bright room.
Movie: Picture for comfortable low brightness display in a dark room.

Scale - select over-scan when the input source is SD or HD video to ensure there is no black band around screen boundary. Select under-scan when input source is a PC signal to ensure entire contents (all the way to the edge) are within the screen boundary.

Mirror – Select mirror to horizontally flip the image. This is useful for teleprompting and rear projection systems.

Noise Reduction - This function only works when the input source is analog RGB or component. It will not work for the DVI input. There are four steps of Noise Reduction: Off, Low, Middle, High. The Noise Reduction will remove the noise that results from the analog to digital conversion and digital scaling process.

H & V position – Adjusts the horizontal and vertical position of the image.

Color Submenu:

User: Select to adjust to your favorite color temperature setting.

Normal: Normal color tone setting where white is pure white.

Warm: Warm color tone (white reddish).

Cool: Cool color tone (white bluish).

Output Submenu:

This submenu is used to set the desired output resolution. When Native is selected the unit reads the native resolution of the connected LCD (via its EDID) and sets its resolution to match it if possible. If both outputs are connected (HD15 and DVI/HDMI™); then the native resolution of the DVI display is used.

OSD Adjust Submenu:

H. Position: Adjust the horizontal position of the OSD graphic.

V. Position: Adjust the vertical position of the OSD graphic.

Time out: Set a predetermined time to turn off the OSD menu on the screen.

Background: To select a transparent or solid background of the OSD graphic.

Information Submenu:

Input: Shows the currently selected input resolution Example: XGA.

Output: Shows the currently selected output resolution. For Example: 720p.

Version: Shows the firmware version.

3.3 Infra-Red Remote control (IR Remote)

Power: Press the button once to power on the AC139A. Press again to enter standby mode.

Input: Press the button repeatedly to toggle through the various input sources

HD: Press the button to select the component input.

PC: Press the button to select the VGA input.

HDMI/DVI: Press the button to select the DVI input.

VGA through 1080p: Press any one of the buttons to directly select the desired output resolution. For other output resolutions that are not covered by these buttons please enter Menu/Output OSD page to select them.

MENU: Press the button to bring up the OSD main menu page.

Exit: Press the button to exit from a sub menu or the main menu.

Up/Down/Left/Right: Press the ▲ or ▼ buttons to move the highlight bar to your desired parameter during the OSD operation. Press the ◄ or ► buttons to increase or decrease the setting value of a selected parameter.

OK (Enter): Press the button to confirm your selection.

Reset: Press the button to reset the unit to the factory default values.

Auto Adjust: Press the button to optimize the position of the picture (picture centering) on the screen.

3.4 IR Codes

The Infra-Red Remote Control codes are shown for users that wish to program their own universal remote control to control the AC139A.

4. Serial Control

The video input selection and signal parameter settings for the AC139A can be controlled via an external control system by using the RS232 port on the unit. Use a straight thru M/F DB9 serial cable to connect the unit to the PC. Only the TX, RX and GND pins are implemented in the connector. The RS232 port operates at 19200 baud, no parity and 1 stop bit. All commands are ASCII characters.

4.1 Read Commands

Command	Response	Description
R POWER	> POWER ON or POWER OFF	SHOW POWER STATUS
R SOURCE	> SOURCE Comp, PC, DVI	SHOW SOURCE STATUS
R OUTPUT	> OUTPUT NATIVE~WUXGA	SHOW OUTPUT STATUS
R SIZE	> SIZE FULL~PANSCAN	SHOW SIZE STATUS
R PICTUREMODE	> PICTUREMODE STANDARD~USER	SHOW PICTURE MODE STATUS
R CONTRAST	> CONTRAST 0~100	SHOW CONTRAST STATUS
R BRIGHTNESS	> BRIGHTNESS 0~100	SHOW BRIGHTNESS STATUS
R HUE	> HUE 0~100	SHOW HUE STATUS
R SATURATION	> SATURATION 0~100	SHOW SATURATION STATUS
R SHARPNESS	> SHARPNESS 0~100	SHOW SHARPNESS STATUS
R NR	> NR OFF~HIGH	SHOW NR STATUS
R PCHPOSITION	> PCHPOSITION 0~100	SHOW PC H-POSITION STATUS
R PCVPOSITION	> PCVPOSITION 0~100	SHOW PC V-POSITION STATUS
R PCCLOCK	> PCCLOCK 0~100	SHOW PC COLOK STATUS
R PCPHASE	> PCPHASE 0~63	SHOW PC PHASE STATUS
R COLORTEMP	> COLORTEMP NORMAL~USER	SHOW COLOR TEMP STATUS
R RED	> RED 0~100	SHOW COLOR TEMP RED STATUS
R GREEN	> GREEN 0~100	SHOW COLOR TEMP GREEN STATUS
R BLUE	> BLUE 0~100	SHOW COLOR TEMP BLUE STATUS
R OSDHPOSITION	> OSDHPOSITION 0~100	SHOW OSD H-POSITION STATUS
R OSDVPOSITION	> OSDVPOSITION 0~100	SHOW OSD V-POSITION STATUS
R OSDTIMEOUT	> OSDTIMEOUT 0~100	SHOW OSD TIMEOUT STATUS
R MIRROR	> MIRROR ON or MIRROR OFF	SHOW MIRROR STATUS
R OSDBACKGROUND	> OSDBACKGROUND 0~8	SHOW OSD BACKGROUND STATUS

An invalid command will respond with “R-[??]”<CR>

4.2 Key Commands

Command	Response	Description
K POWER	> POWER	PRESS POWER BUTTON
K MENU	> MENU	PRESS MENU BUTTON
K UP	> UP	PRESS UP BUTTON
K DOWN	> DOWN	PRESS DOWN BUTTON

An invalid command will respond with “K-[??]”<CR>

4.3 Set Commands

Command	Response	Description
S POWER 0	> POWER OFF	POWER OFF
S POWER 1	> POWER ON	POWER ON
S SOURCE 0	> SOURCE COMP	COMPONENT INPUT
S SOURCE 1	> SOURCE PC	PC INPUT
S SOURCE 2	> SOURCE DVI	DVI INPUT
S OUTPUT 0	> OUTPUT NATIVE	NATIVE RESOLUTION OUTPUT
S OUTPUT 1	> OUTPUT VGA	VGA RESOLUTION OUTPUT
S OUTPUT 2	> OUTPUT SVGA	SVGA RESOLUTION OUTPUT
S OUTPUT 3	> OUTPUT XGA	XGA RESOLUTION OUTPUT
S OUTPUT 4	> OUTPUT SXGA	SXGA RESOLUTION OUTPUT
S OUTPUT 5	> OUTPUT UXGA	UXGA RESOLUTION OUTPUT
S OUTPUT 6	> OUTPUT 480I	480I RESOLUTION OUTPUT
S OUTPUT 7	> OUTPUT 480P	480P RESOLUTION OUTPUT
S OUTPUT 8	> OUTPUT 720P	720P 60HZ RESOLUTION OUTPUT
S OUTPUT 9	> OUTPUT 1080I	1080I 60HZ RESOLUTION OUTPUT
S OUTPUT 10	> OUTPUT 1080P	1080P 60HZ RESOLUTION OUTPUT
S OUTPUT 11	> OUTPUT 576I	576I 60HZ RESOLUTION OUTPUT
S OUTPUT 12	> OUTPUT 576P	576P 60HZ RESOLUTION OUTPUT
S OUTPUT 13	> OUTPUT 720P	720P 50HZ RESOLUTION OUTPUT
S OUTPUT 14	> OUTPUT 1080I50	1080I 50HZ RESOLUTION OUTPUT
S OUTPUT 15	> OUTPUT 1080P50	1080P 50HZ RESOLUTION OUTPUT
S OUTPUT 16	> OUTPUT WXGA	WXGA RESOLUTION OUTPUT
S OUTPUT 17	> OUTPUT WSXGA	WSXGA RESOLUTION OUTPUT
S OUTPUT 18	> OUTPUT WUXGA	WUXGA RESOLUTION OUTPUT
S SIZE 0	> SIZE FULL	SCALER FULL OUTPUT
S SIZE 1	> SIZE OVERSCAN	SCALER OVERSCAN OUTPUT
S SIZE 2	> SIZE UNDERSCAN	SCALER UNDERSCAN OUTPUT
S SIZE 3	> SIZE LETTERBOX	SCALER LETTERBOX OUTPUT
S SIZE 4	> SIZE PANSCAN	SCALER PANSCAN OUTPUT
S PICTUREMODE 0~3	> PICTUREMODE STANDARD~USER	0:STANDARD ; 1:MOVIE ; 2:VIVID ; 3:USER ,PICTURE MODE OUTPUT
S CONTRAST 0~100	> CONTRAST 0~100	CONTRAST 0~100 ADJUST [Default:50]
S BRIGHTNESS 0~100	> BRIGHTNESS 0~100	BRIGHTNESS 0~100 ADJUST [Default:45]
S HUE 0~100	> HUE 0~100	HUE 0~100 ADJUST [Default:50]
S SATURATION 0~100	> SATURATION 0~100	SATURATION 0~100 ADJUST [Default:60]
S SHARPNESS 0~100	> SHARPNESS 0~100	SHARPNESS 0~100 ADJUST [Default:32]
S NR 0~3	> NR OFF~HIGH	0:OFF ; 1:LOW ; 2:MID ; 3:HIGH ,NR CONTROL
S PCHPOSITION 0~100	> PCHPOSITION 0~100	H POSITION 0~100 ADJUST
S PCVPOSITION 0~100	> PCVPOSITION 0~100	V POSITION 0~100 ADJUST
S PCCLOCK 0~100	> PCCLOCK 0~100	PC MODE COLCK 0~100 ADJUST
S PCPHASE 0~63	> PCPHASE 0~63	PC MODE PHASE 0~63 ADJUST
S COLORTEMP 0~3	> COLORTEMP NORMAL~USER	0:NORMAL ; 1:WARM ; 2:COOL ; 3:USER ,COLOR TEMP SETTING
S RED 0~100	> RED 0~100	COLOR TEMP "RED" ADJUST [Defaut:47]
S GREEN 0~100	> GREEN 0~100	COLOR TEMP "GREEN" ADJUST [Defaut:47]
S BLUE 0~100	> BLUE 0~100	COLOR TEMP "BLUE" ADJUST [Defaut:47]
S OSDHPOSITION 0~100	> OSDHPOSITION 0~100	OSD H POSITION 0~100 ADJUST [Defaut:50]
S OSDVPOSITION 0~100	> OSDVPOSITION 0~100	OSD V POSITION 0~100 ADJUST [Defaut:50]
S OSDTIMEOUT 0~100	> OSDTIMEOUT 0~100	OSD TIMEOUT 0~100 SETTING [Defaut:10]
S MIRROR 0	MIRROR OFF	TURN HORIZONTAL MIRRORING OFF
S MIRROR 1	MIRROR ON	TURN HORIZONTAL MIRRORING ON
S OSDBACKGROUND 0~8	> OSDBACKGROUND 0~8	OSD OSDBACKGROUND 0~8 ADJUST [Defaut:5]
S RESET 1	> RESET ON	RESET ACTION

An invalid command will respond with “S-[??]-[xx]”<CR>

5. Troubleshooting

There are no field serviceable parts or circuits in the device. If you think that the device is malfunctioning, please first try to reset to the factory default settings (using the RESET button on the IR remote control), and set the output either to XGA (Press MENU + ▲) or 480p (Press MENU + ▼) to obtain an image on your LCD.

If you are having trouble displaying a picture from an HDMI™ source, ensure that the display device connected to the AC139A is HDCP compliant.

For HDMI™ compliance, when the DVI input is selected, and HCDP content protection is detected on the signal, the HD15 analog output is blanked. The front panel input LED will blink when this condition is detected. The Digital DVI output will be active when connected to a HDCP compliant LCD (such as a display with HDMI™ input).

Contacting Black Box

If you determine that your scaler is malfunctioning, do not attempt to repair the unit. There are no user serviceable parts inside the unit. Opening the unit will void the warranty. Contact Black Box at 724-746-5500. Before you do, make a record of the problem. We will be able to provide more efficient and accurate assistance if you have a complete description.

Shipping and Packaging

If you need to transport or ship your scaler:

- Package it carefully. Use the original container if possible.
- Before you shipping the unit, contact us to get a Return Authorization (RA) number.

6. Specifications

Supported Input Formats:

Resolution	DVI / HDMI™	VGA (PC)	YPbPr
480i/576i	✓		✓
480p/576p	✓	✓	✓
720p@(60/50)	✓	✓	✓
1080i@(60/50)	✓		✓
1080p@(60/50)	✓	✓	✓
VGA@(60/72/75/85)	✓	✓	
SVGA@(56/60/72/75/85)	✓	✓	
XGA@(60/70/75/85)	✓	✓	
SXGA@(60/75/85)	✓	✓	
UXGA@60	✓	✓	
WXGA@60(1280X800)	✓	✓	
WSXGA@60(1680X1050)	✓	✓	
WUXGA@60(1920X1200)	✓	✓	

Available Output Formats:

Resolution	DVI / HDMI™	HD-15
480i/576i	✓	✓
480p/576p	✓	✓
720p@(60/50)	✓	✓
1080i@(60/50)	✓	✓
1080p@(60/50)	✓	✓
VGA@60	✓	✓
SVGA@@60	✓	✓
XGA@@60	✓	✓
SXGA@@60	✓	✓
UXGA@60	✓	✓
WXGA@60(1280X800)	✓	✓
WSXGA@60(1680X1050)	✓	
WUXGA@60(1920X1200)	✓	

Dimensions: 9.4 inch (Wide) x 5.0 inch (Deep) x 1.75 inch (High)

Weight: 2 Pounds (910 g)

Input Power: 90 ~ 264 Vac, 50 ~ 60 Hz (7.5 watts max)

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